General Chemistry Linus Pauling

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Through Alchemy to Chemistry John Read 1957
General Chemistry Peter William Atkins 1992 Previous ed published: 1989 Periodic table and text on lining papers Includes index and appendices.
A Lifelong Quest for Peace Linus Pauling 1992 A Lifelong Quest for Peace: A Dialogue will provided readers the opportunity to get to know Dr. Pauling and Mr. Ikeda, as they seek to provide pointers to help the young people of today solve the problems of the twenty-first century.
Neither Physics nor Chemistry Kostas Gavroglu 2011-10-07 The evolution of a discipline at the intersection of physics, chemistry, and mathematics. Quantum chemistry—a discipline that is not quite physics, not quite chemistry, and not quite applied mathematics—emerged as a field of study in the 1920s. It was referred to by such terms as mathematical chemistry, subatomic theoretical chemistry, molecular quantum mechanics, and chemical physics until the community agreed on the designation of quantum chemistry. In Neither Physics Nor Chemistry, Kostas Gavroglu and Ana Simões examine the evolution of quantum chemistry into an autonomous discipline, tracing its development from the publication of early papers in the 1920s to the dramatic changes brought about by the use of computers in the 1970s. The authors focus on the culture that emerged from the creative synthesis of the various traditions of chemistry, physics, and mathematics. They examine the concepts, practices, languages, and institutions of this new culture as well as the people who established it, from such pioneers as Walter Heitler and Fritz London, Linus Pauling, and Robert Sanderson Mulliken, to later figures including Charles Alfred Coulson, Raymond Daudel, and Per-Olov Löwdin. Throughout, the authors emphasize six themes: epistemic aspects and the dilemmas caused by multiple approaches; social issues, including academic politics, the impact of textbooks, and the forging of alliances; the contingencies that arose at every stage of the developments in quantum chemistry; the changes in the field when computers were available to perform the extraordinarily cumbersome calculations required; issues in the philosophy of science; and different styles of reasoning.
General chemistry Linus Pauling 1988
Group Theory and Chemistry David M. Bishop 2012-07-12 Concise, self-contained introduction to group theory and its applications to chemical problems. Symmetry, matrices, molecular vibrations, transition metal chemistry, more. Relevant math included. Advanced-undergraduate/graduate-level. 1973 edition.
Mechanics J. P. Den Hartog 2013-03-13 This classic introductory text features hundreds of applications and design problems that illuminate fundamentals of trusses, loaded beams and cables, and related areas. Includes 334 answered problems.
Nature of Science in General Chemistry Textbooks Mansoor Niaz 2011-07-15 Research in science education has recognized the importance of history and philosophy of science (HPS). Nature of science (NOS) is considered to be an essential part of HPS with important implications for teaching science. The role played by textbooks in developing students' informed conceptions of NOS has been a source of considerable interest for science educators. In some parts of the world, textbooks become the curriculum and determine to a great extent what is taught and learned in the classroom. Given this background and interest, this monograph has evaluated NOS in university level general chemistry textbooks published in U.S.A. Most textbooks in this study provided little insight with respect to the nine criteria used for evaluating NOS. Some of the textbooks, however, inevitably refer to HPS and thus provide guidelines for future textbooks. A few of the textbooks go into considerable detail to present the atomic models of Dalton, Thomson, Rutherford, Bohr and wave mechanical to illustrate the tentative nature of scientific theories --- an important NOS aspect. These results lead to the question: Are we teaching science as practiced by scientists? An answer to this question can help us to understand the importance of NOS, by providing students an HPS-based environment, so that they too (just like the scientists) feel the thrill and excitement of discovering new things. This monograph provides students and teachers guidelines for introducing various aspects of NOS, based on historical episodes.
Group Theory and Quantum Mechanics Michael Tinkham 2012-04-20 This graduate-level text develops the aspects of group theory most relevant to physics and chemistry (such as the theory of representations) and illustrates their applications to quantum mechanics. The first five chapters focus chiefly on the introduction of methods, illustrated by physical examples, and the final three chapters offer a systematic treatment of the quantum theory of atoms, molecules, and solids. The formal theory of finite groups and their representation is developed in Chapters 1 through 4 and illustrated by examples from the crystallographic point groups basic to solid-state and molecular theory. Chapter 5 is devoted to the theory of systems with full rotational symmetry, Chapter 6 to the systematic presentation of atomic structure, and Chapter 7 to molecular quantum mechanics. Chapter 8, which deals with solid-state physics, treats electronic energy band theory and magnetic crystal symmetry. A compact and worthwhile compilation of the scattered material on standard methods, this volume presumes a basic understanding of quantum theory.
Principles of Bioinorganic Chemistry Stephen J. Lippard 1994 As one of the most dynamic fields in contemporary science, bioinorganic chemistry lies at a natural juncture between chemistry, biology, and medicine. This rapidly expanding field probes fascinating questions about the uses of metal ions in nature. Respiration, metabolism, photosynthesis, gene regulation, and nerve impulse transmission are a few of the many natural processes that require metal ions, and new systems are continually being discovered. The use of unnatural metals - which have been introduced into human biology as diagnostic probes and drugs - is another active area of tremendous medical significance. This introductory text, written by two pioneering researchers, is destined to become a landmark in the field of bioinorganic chemistry through its organized unification of key topics. Accessible to undergraduates, the book provides necessary background information on coordination chemistry, biochemistry, and physical methods before delving into topics that are central to the field: What metals are chosen and how are they taken up by cells? How are the concentrations of metals controlled and utilized in cells? How do metals bind to and fold biomolecules? What principles govern electron transfer and substrate binding and activation reactions? How do proteins fine-tune the properties of metals for specific functions? For each topic discussed, fundamentals are identified and then clarified through selected examples. An extraordinarily readable writing style combines with chapter-opening principles, study problems, and beautifully rendered two-color illustrations to make this book an ideal choice for instructors, students, and researchers in the chemical, biological, and medicalcommunities.
General Chemistry Linus Pauling 2014-11-24 Revised third edition of classic first-year text by Nobel laureate. Atomic and molecular structure, quantum mechanics, statistical mechanics, thermodynamics correlated with descriptive chemistry. Problems.
College Chemistry Linus Pauling 1955 An introduction to modern chemistry. Some aspects of chemical theory. Some non-metallic elements and their compounds. Water, solutions, chemical equilibrium. Metals and the compounds of metals. Organic chemistry, biochemistry, and nuclear chemistry.
Chemistry for Matriculation G. H. Bailey 2007-03 PREFACE. THE Author of this very practical treatise on Scotch Loch - Fishing desires clearly that it may be of use to all who had it. He does not pretend to have written anything new, but to have attempted to put what he has to say in as readable a form as possible. Everything in the way of the history and habits of fish has been studiously avoided, and technicalities have been used as sparingly as possible. The writing of this book has afforded him pleasure in his leisure moments, and that pleasure would be much increased if he knew that the perusal of it would create any bond of sympathy between himself and the angling community in general. This section is interleaved with blank shects for the readers notes. The Author need hardly say that any suggestions addressed to the case of the publishers, will meet with consideration in a future edition. We do not pretend to write or enlarge upon a new subject. Much has been said and written-and well said and written too on the art of fishing but loch-fishing has been rather looked upon as a second-rate performance, and to dispel this idea is one of the objects for which this present treatise has been written. Far be it from us to say anything against fishing, lawfully practised in any form but many pent up in our large towns will bear us out when me say that, on the whole, a days loch-fishing is the most convenient. One great matter is, that the loch-fisher is depend- ent on nothing but enough wind to curl the water, -and on a large loch it is very seldom that a dead calm prevails all day, -and can make his arrangements for a day, weeks beforehand whereas the stream- fisher is dependent for a good take on the state of the water and however pleasant and easy it may be for one living near the banks of a good trout stream or river, it is quite another matter to arrange for a days river-fishing, if one is looking forward to a holiday at a date some weeks ahead. Providence may favour the expectant angler with a good day, and the water in order but experience has taught most of us that the good days are in the minority, and that, as is the case with our rapid running streams, -such as many of our northern streams are, -the water is either too large or too small, unless, as previously remarked, you live near at hand, and can catch it at its best. A common belief in regard to loch-fishing is, that the tyro and the experienced angler have nearly the same chance in fishing, -the one from the stern and the other from the bow of the same boat. Of all the absurd beliefs as to loch-fishing, this is one of the most absurd. Try it. Give the tyro either end of the boat he likes give him a cast of ally flies he may fancy, or even a cast similar to those which a crack may be using and if he catches one for every three the other has, he may consider himself very lucky. Of course there are lochs where the fish are not abundant, and a beginner may come across as many as an older fisher but we speak of lochs where there are fish to be caught, and where each has a fair chance. Again, it is said that the boatman has as much to do with catching trout in a loch as the angler. Well, we dont deny that. In an untried loch it is necessary to have the guidance of a good boatman but the same argument holds good as to stream-fishing...
General chemistry Linus Pauling 1956
How to Live Longer and Feel Better Linus Pauling 2006-05-01 How to Live Longer and Feel Better introduces to a new generation of health-conscious readers Linus Pauling's regimen for healthy longevity. Eminently readable and challenging, and a New York Times bestseller when it was first published in 1986, Pauling's seminal work helped to revolutionize the way Americans think about nutrition.
Calculus Morris Kline 2013-05-09 Application-oriented introduction relates the subject as closely as possible to science with explorations of the derivative; differentiation and integration of the powers of x; theorems on differentiation, antidifferentiation; the chain rule; trigonometric functions; more. Examples. 1967 edition.
Linus Pauling — Selected Scientific Papers Barclay Kamb 2001-11-02 Linus Pauling wrote a stellar series of over 800 scientific papers spanning an amazing range of fields, some of which he himself initiated. This book is a selection of the most important of his writings in the fields of quantum mechanics, chemical bonding (covalent, ionic, metallic, and hydrogen bonding), molecular rotation and entropy, protein structure, hemoglobin, molecular disease, molecular evolution, the antibody mechanism, the molecular basis of anesthesia, orthomolecular medicine, radiation chemistry/biology, and nuclear structure. Through these papers the reader gets a fresh, unfiltered view of the genius of Pauling's many contributions to chemistry, chemical physics, molecular biology, and molecular medicine.
Elements of Chemical Thermodynamics Leonard K. Nash 2013-02-20 This survey of purely thermal data in calculating the position of equilibrium in a chemical reaction highlights the physical content of thermodynamics, as distinct from purely mathematical aspects. 1970 edition.
General Chemistry Linus Pauling 1970
Communicating Chemistry Anders Lundgren 2000 Historians and philosophers of science offer 18 papers from a European Science Foundation workshop held in Uppsala, Sweden, in February 1996, explore such questions as how textbooks differ from other forms of chemical literature, under what conditions they become established as a genre, whether they develop a specific rhetoric, how their audiences help shape the profile of chemistry, translations, and other topics. Only names are indexed.
Introduction to Quantum Mechanics with Applications to Chemistry Linus Pauling 2012-06-08 Classic undergraduate text explores wave functions for the hydrogen atom, perturbation theory, the Pauli exclusion principle, and the structure of simple and complex molecules. Numerous tables and figures.
The Nature of the Chemical Bond and the Structure of Molecules and Crystals 1945
Chemical Kinetics and Reaction Dynamics Paul L. Houston 2012-10-10 DIVThis text teaches the principles underlying modern chemical kinetics in a clear, direct fashion, using several examples to enhance basic understanding. Solutions to selected problems. 2001 edition. /div
General, Organic, and Biological Chemistry Dorothy M. Feigl 1986
Modern Quantum Chemistry Attila Szabo 2012-06-08 This graduate-level text explains the modern in-depth approaches to the calculation of electronic structure and the properties of molecules. Largely self-contained, it features more than 150 exercises. 1989 edition.
Understanding Chemistry
Understanding Thermodynamics H.C. Van Ness 2012-06-08 Clear treatment of systems and first and second laws of thermodynamics features informal language, vivid and lively examples, and fresh perspectives. Excellent supplement for undergraduate science or engineering class.
Linus Pauling in His Own Words Linus Pauling 1995-10-30 Selected writings share the late scientist's views on chemistry, education, the structure of matter, proteins, nuclear politics, fallout, and nutritional medicine
Linus Pauling Clifford Mead 2008-03-01 One of the most brilliant scientists and most controversial individuals of the twentieth century, Linus Pauling was the only person to win two unshared Nobel Prizes. This unique volume, first published to mark the centenary of Pauling's birth, gathers his words and those of his contemporaries and students, together with photographs, drawings, and reproductions from the Pauling Papers. Pauling (1901-1994) was known for being outspoken and for leaping over scientific boundariesfrom physics to chemistry to biology to medical research. This collection draws a vivid portrait of a remarkable man'scientist, humanist, and activist?highlighting his larger-than-life personality and his singular achievements. As both scientist and citizen, Pauling was passionate and deeply thoughtful. He wrote The Nature of the Chemical Bond, one of the most cited sources in scientific history, and won the Nobel Prize in Chemistry in 1954. He risked his reputation during the McCarthy years as a vocal opponent of Cold War policies and nuclear proliferation. As a result, he was vilified by the press, investigated by the FBI, and awarded the 1962 Nobel Peace Prize.In the 1970s, Pauling again gained international recognition, this time for his advocacy of megadoses of vitamin C as a cure for cancer and cold prevention.
A Short History of Chemistry James Riddick Partington 1989 This classic exposition explores the origins of chemistry, alchemy, early medical chemistry, nature of atmosphere, theory of valency, laws and structure of atomic theory, and much more.
Boron Hydrides William N. Lipscomb 2013-05-13 This classic monograph by a Nobel Prize–winning chemist covers the general structural principles and reactions of boron hydrides and related compounds. Includes more than 120 diagrams and figures. 1963 edition.
No More War! Linus Pauling 1983
Electrodynamics Wolfgang Pauli 2000-01-01 In the 1950s, the distinguished theoretical physicist Wolfgang Pauli delivered a landmark series of lectures at the Swiss Federal Institute of Technology in Zurich. His comprehensive coverage of the fundamentals of classical and modern physics was painstakingly recorded not only by his students but also by a number of collaborators, whose carefully edited transcriptions resulted in a remarkable six-volume work. This volume, the first of the series, presents a brief survey of the historical development and then-current problems of electrodynamics, followed by sections on electrostatics and magnetostatics, steady-state currents, quasi-static fields, and rapidly varying fields. As does each book in the series, Volume 1 includes an index and a wealth of helpful figures, and can be read independently of the series by those who wish to focus on a particular topic. Originally published in 1973, the text remains entirely relevant thanks to Pauli's manner of presentation. As Victor F. Weisskopf notes in the Foreword to the series, Pauli's style is "commensurate to the greatness of its subject in its clarity and impact. Pauli's lectures show how physical ideas can be presented clearly and in good mathematical form, without being hidden in formalistic expertise." Alone or as part of the complete set, this volume represents a peerless resource invaluable to individuals, libraries, and other institutions.
Transition Metals in the Synthesis of Complex Organic Molecules Louis S. Hegedus 1999 This second edition offers easy access to the field of organotransition metal chemistry. The book covers the basics of transition metal chemistry, giving a practical introduction to organotransition reaction mechanisms.
College Chemistry Linus Pauling 1950
The VSEPR Model of Molecular Geometry Ronald J Gillespie 2013-03-21 Authoritative reference features extensive coverage of structural information as well as theory and applications. Helpful data on molecular geometries, bond lengths, and bond angles in tables and other graphics. 1991 edition.
What is Chemistry? Peter Atkins 2013-08-22 Most people remember chemistry from their schooldays as a subject that was largely incomprehensible, fact-rich but understanding-poor, smelly, and so far removed from the real world of events and pleasures that there seemed little point, except for the most introverted, in coming to terms with its grubby concepts, spells, recipes, and rules. Peter Atkins wants to change all that. In What is Chemistry? he encourages us to look at chemistry anew, through a chemist's eyes, to understand its central concepts and to see how it contributes not only towards our material comfort, but also to human culture. Atkins shows how chemistry provides the infrastructure of our world, through the chemical industry, the fuels of heating, power generation, and transport, as well as the fabrics of our clothing and furnishings. By considering the remarkable achievements that chemistry has made, and examining its place between both physics and biology, Atkins presents a fascinating, clear, and rigorous exploration of the world of chemistry - its structure, core concepts, and exciting contributions to new cutting-edge technologies.
Chemistry Richard Post 2020-09-16 THE QUICK AND PAINLESS WAY TO TEACH YOURSELF BASIC CHEMISTRY CONCEPTS AND TERMS Chemistry: A Self-Teaching Guide is the easy way to gain a solid understanding of the essential science of chemistry. Assuming no background knowledge of the subject, this clear and accessible guide covers the central concepts and key definitions of this fundamental science, from the basic structure of the atom to chemical equations. An innovative self-guided approach enables you to move through the material at your own pace—gradually building upon your knowledge while you strengthen your critical thinking and problem-solving skills. This edition features new and revised content throughout, including a new chapter on organic chemistry, designed to dramatically increase how fast you learn and how much you retain. This powerful learning resource features: An interactive, step-by-step method proven to increase your understanding of the fundamental concepts of chemistry Learning objectives, practice questions, study problems, and a self-review test in every chapter to reinforce your learning An emphasis on practical concepts and clear explanations to ensure that you comprehend the material quickly Engaging end-of-chapter stories connecting the material to a relevant topic in chemistry to bring important concepts to life Concise, student-friendly chapters describing major chemistry concepts and terms, including the periodic table, atomic weights, chemical bonding, solutions, gases, solids, and liquids Chemistry: A Self-Teaching Guide is an ideal resource for high school or college students taking introductory chemistry courses, for students taking higher level courses needing to refresh their knowledge, and for those preparing for standardized chemistry and medical career admission tests.
The Feynman Lectures on Physics, Vol. III Richard P. Feynman 2011-10-04 New edition features improved typography, figures and tables, expanded indexes, and 885 new corrections.
From X-rays to Quarks Emilio Segrè 2012-05-03 A Nobel Laureate offers impressions of the development of modern physics, emphasizing complex but less familiar personalities. Offers fascinating scientific background and compelling treatments of topics of current interest. 1980 edition.